CLAIMS

What is claimed is:

1. A capacitor structure formed on a semiconductor substrate for providing capacitance between a first node and a second node comprising:

one or more layers of conductive strips, said conductive strips in each layer alternately connected to the first and second nodes, and

a conductive plate disposed beneath the lowest of the one or more layers of conductive strips.

2. The capacitor structure of claim 1, wherein said conductive plate is connected to the first node.

3. The capacitor structure of claim 1, wherein said conductive plate is connected to the second node.

4. The capacitor structure of claim 1, wherein said conductive plate is connected to a third node.

5. The capacitor structure of claim 1, wherein said conductive plate is connected to a reference voltage.

6. The capacitor structure of claim 1, wherein said conductive plate is connected to ground.

7. The capacitor structure of claim 1, wherein all of said conductive strips have the same width and spacing.

8. The capacitor structure of claim 1, wherein the capacitor structure includes a plurality of layers of conductive strips.

9. The capacitor structure of claim 8, wherein the plurality of layers of conductive strips are aligned so that strips connected to the first node lie above strips connected to the second node.

10. The capacitor structure of claim 8, wherein the plurality of layers of conductive strips are aligned so that strips connected to the first node lie above strips connected to the first node.

11. The capacitor structure of claim 1, further comprising a second conductive plate disposed above the highest of the one or more layers of conductive strips.

12. The capacitor structure of claim 1, wherein said conductive plate is connected to the second node.

13. The capacitor structure of claim 1, wherein said conductive plate is connected to the first node.

14. The capacitor structure of claim 1, wherein said conductive plate is connected to a third node.

15. The capacitor structure of claim 1, wherein said conductive plate is connected to a reference voltage.

16. The capacitor structure of claim 1, wherein said conductive plate is connected to ground.

17. The capacitor structure of claim 1, further comprising a second conductive plate disposed above the highest of the one or more layers of conductive strips, said conductive plate connected to the first node.

18. The capacitor structure of claim 1, wherein the conductive plate is comprised of a solid planar conductive material.

19. The capacitor structure of claim 1, wherein the conductive plate is comprised of a plurality of conductive strips connected to the first node.

20. The capacitor structure of claim 1, further comprising a conducting side plate disposed to the side of the one or more layers of conductive strips.

21. The capacitor structure of claim 20, wherein the conducting side plate is comprised of one or more conductive strips connected together and connected to the conductive plate by vias.

22. The capacitor structure of claim 20, wherein the conductive side plate is connected to the first node.

23. The capacitor structure of claim 20, wherein the conductive side plate is connected to the second node.

24. The capacitor structure of claim 20, , wherein the conductive side plate is connected to a third node.

25. The capacitor structure of claim 20, wherein the conductive side plate is connected to a reference voltage.

26. The capacitor structure of claim 20, wherein the conductive side plate is connected to ground.

27. The capacitor structure of claim 1, wherein the capacitor structure forms a metal-to-metal capacitor.

28. A capacitor structure formed on a semiconductor substrate for providing capacitance between a first node and a second node comprising:
one or more layers of conductive strips, said conductive strips in each layer alternately connected to the first and second nodes, and
a conductive plate disposed above the highest of the one or more layers of conductive strips.

29. The capacitor structure of claim 28, wherein said conductive plate is connected to the first node.

30. The capacitor structure of claim 28, wherein said conductive plate is connected to the second node.

31. The capacitor structure of claim 28, wherein said conductive plate is connected to a third node.

32. The capacitor structure of claim 28, wherein said conductive plate is connected to a reference voltage.

33. The capacitor structure of claim 28, wherein said conductive plate is connected to ground.

34. The capacitor structure of claim 28, wherein all of said conductive strips have the same width and spacing.

35. The capacitor structure of claim 28, wherein the capacitor structure includes a plurality of layers of conductive strips.

36. The capacitor structure of claim 35, wherein the plurality of layers of conductive strips are aligned so that strips connected to the first node lie above strips connected to the second node.

37. The capacitor structure of claim 35, wherein the plurality of layers of conductive strips are aligned so that strips connected to the first node lie above strips connected to the first node.

38. The capacitor structure of claim 28, wherein the conductive plate is comprised of a solid planar conductive material.

39. The capacitor structure of claim 28, wherein the conductive plate is comprised of a plurality of conductive strips connected to the first node.

40. The capacitor structure of claim 28, further comprising a conducing side plate disposed to the side of the one or more layers of conductive strips.

41. The capacitor structure of claim 40, wherein the conducing side plate is comprised of one or more conductive strips connected together and connected to the conductive plate by vias.

42. The capacitor structure of claim 40, wherein the conductive side plate is connected to the first node.

43. A capacitor structure formed on a semiconductor substrate for providing capacitance between a first node and a second node comprising:
one or more layers of conductive strips, each of said conductive strips in each layer being connected to one of the first or second nodes, and
a conductive shield disposed adjacent to the capacitor structure for shielding the capacitor structure.

44. The capacitor structure of claim 43, wherein the conductive shield is disposed below the capacitor structure.

45. The capacitor structure of claim 43, wherein the conductive shield is disposed above the capacitor structure.

46. The capacitor structure of claim 43, wherein the conductive shield is disposed to the side of the capacitor structure.

47. The capacitor structure of claim 43, wherein the conductive shield is connected to one of the first or second nodes.

48. The capacitor structure of claim 43, wherein the conductive shield is connected to a reference voltage.

49. The capacitor structure of claim 43, wherein the conductive shield is connected to ground.

50. The capacitor structure of claim 43, further comprising a second conductive shield disposed adjacent to the capacitor structure for shielding the capacitor structure.

51. The capacitor structure of claim 1, wherein conductive strips in a first layer of conductive strips have a different width and spacing than conductive strips in a second layer of conductive strips.

52. The capacitor structure of claim 28, wherein conductive strips in a first layer of conductive strips have a different width and spacing than conductive strips in a second layer of conductive strips.